



INSTALLATION INSTRUCTIONS

MS 0107-01 | 04.13.11

# Z-TRACK

**⚠ WARNING:**  
Cancer and Reproductive Harm | [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

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# Z-Track User Guide

## ABOUT ZIPPERTUBING®

Since 1957, Zippertubing® has been solving every type of cable bundling, heat-shielding, EMI-shielding, specialized heat shrink and marine fairing component challenge. From under the sea to outer space, we have prototyped, manufactured, and shipped custom-engineered solutions for every type of industry. We specialize in creating unique custom solutions in-house from beginning to end, so you feel confident you will receive the perfect product every time.

No matter the size, shape, standards, or specifications, Zippertubing® will abide by any requirements to create a custom solution. If the project has material restrictions or weight limitations, we will create a solution to fit your unique application needs, rather than make your application fit the product. We will draw up, prototype, and refine to ensure the solution is exceeding your expectations.



## TABLE OF CONTENTS

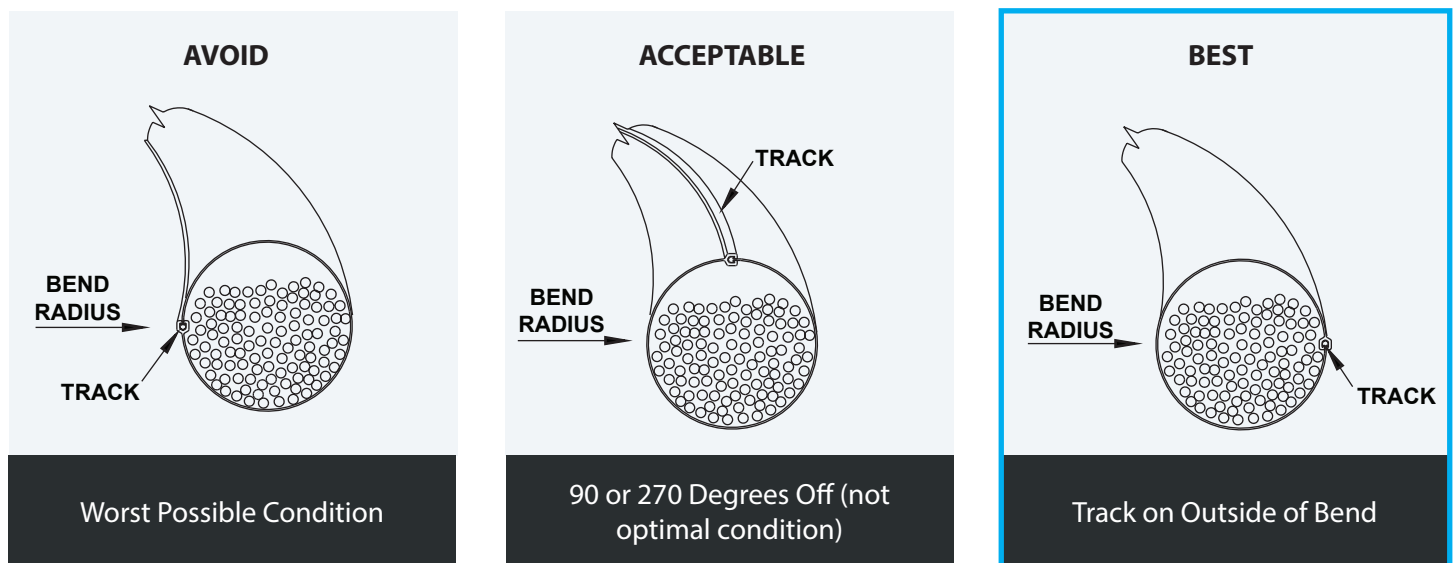
INTRODUCTION .....	2
TRACK CLOSURE VS BEND LOCATION .....	2
INSTALLATION TOOLS .....	3
INSTALLATION .....	3
TIPS AND TRICKS .....	9
SEALING EXTRUDED TRACKS .....	11
NOTES .....	12

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## INTRODUCTION

The Z-Track closure is a medium size arrowhead & channel interlock design approximately .150" wide and is the most versatile closure offered for zip-on jacket applications. It should always be considered as the first closure choice when designing a wrap-a-round jacket system. Z-Track is extruded in multiple flame-retardant polymer compounds. When combined with our film or coated fabric jacketing materials, Z-Track can accommodate round, flat and rectangular cable jacket configurations.

## TRACK CLOSURE VS BEND LOCATION



### Installation Notes

1. Always size the Zippertubing® jacket at least 1/8 inch larger than the maximum cable diameter. If severe cable bending is anticipated, increasing jacket diameter beyond the 1/8 inch requirement is advisable.
2. Always install Zippertubing® jackets so that the track faces the outside of the bend radius. Failure to position the jacket in this manner may result in the track "popping open" due to track distortion.
3. If the design does not call for re-opening the jacket periodically, it may be desirable to seal the track closed using ZT-Tape® (see "SEALING EXTRUDED TRACKS" on page 11).
4. The most common causes of tracks "popping open" are:
  - Improperly closed track
  - Incorrectly sized jacket, less than 1/8 inch oversize
  - Track located other than on the outside of the bend radius

## INSTALLATION TOOLS

The **ZTZ-SP PLIER** tool is a stainless steel plier tool designed for closing Zippertubing® Z-Track products. The small hand-held plier tool utilizes small finger lips to spread the channel cavity of the Z-Track extrusion. At the same time, the arrowhead side of the extrusion is forced into the open channel cavity. As the tool slides along the cable run the channel cavity closes behind the tool which traps the arrowhead barbs within. The tool makes closing Z-Track fast and easy while minimizing operator fatigue. As the tool slides along the cable run, it will form the jacket material into a continuous tube.



## INSTALLATION

### ZTZ-SP PLIER TOOL INSTRUCTIONS

The following procedure describes the installation of a Zippertubing® jacket which has the Z-Track extruded inter-lock closure using the Zippertubing® “ZTZ-SP” plier tool. The procedure defines the basic closing procedure and provides several tips and tricks that will make installation easier.

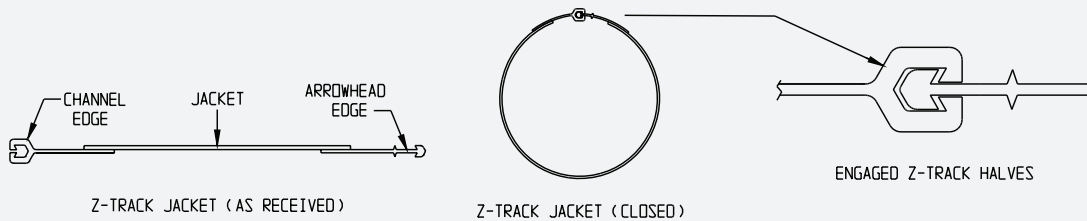
Select a work area that has plenty of light and where you can sit down. Proceed to the installation sequence steps listed below.

### STEP 01

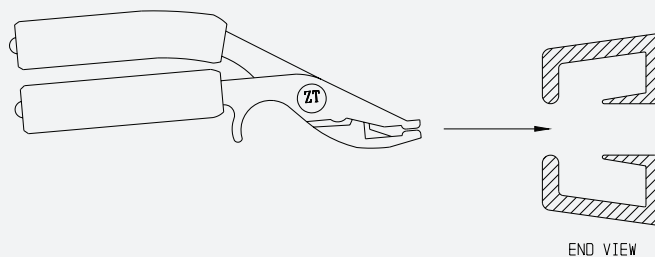
#### Material & Tooling

Examine the piece of Zippertubing® jacket material and the plier tool.

**Figure 1** illustrates the closure mechanism along each edge of the jacket in both the open (as delivered) and closed (installed) conditions.



**Figure 2** illustrates the plier tool construction and the end view of the tool

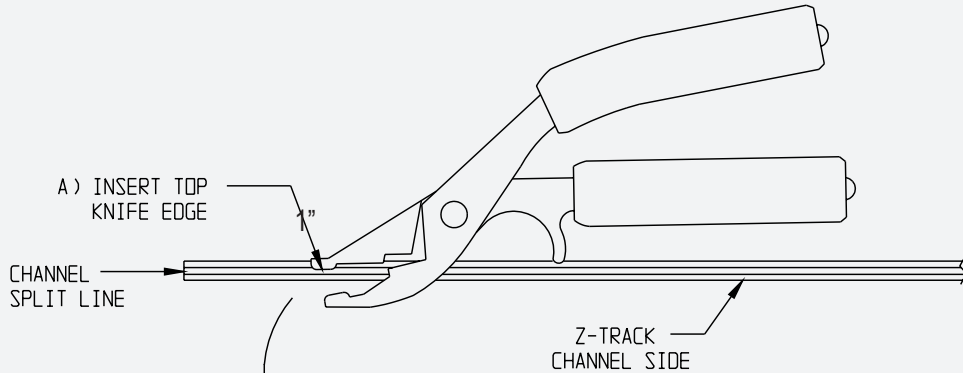


**STEP**  
**02**

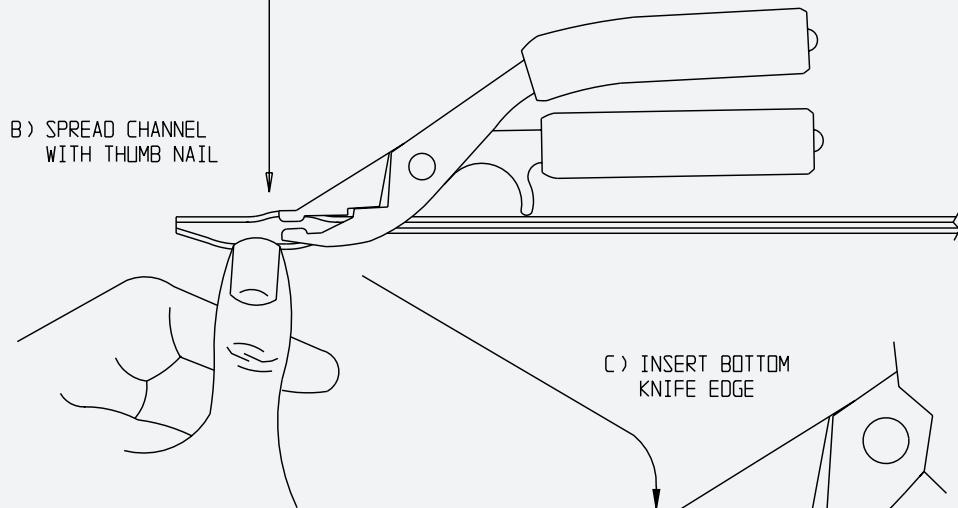
**Installing the Tool (right handed installer)**

Hold the end of the jacket in your left hand with the channel extrusion facing up. Hold the tool in your right hand and spread the handles so the jaws open. Insert the top knife-edge (**Figure A**) tang of the tool tip into the slit of the channel approximately 1 inch back from the end of the material. With the fingernail of your left thumb, spread (**Figure B**) the channel just ahead of the tool tip and twist the channel open so that the lower knife-edge (**Figure C**) tang of the tool enters the channel extrusion.

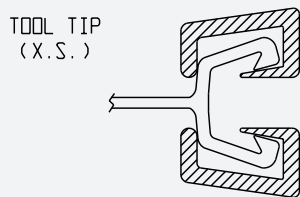
**Figure A**



**Figure B**



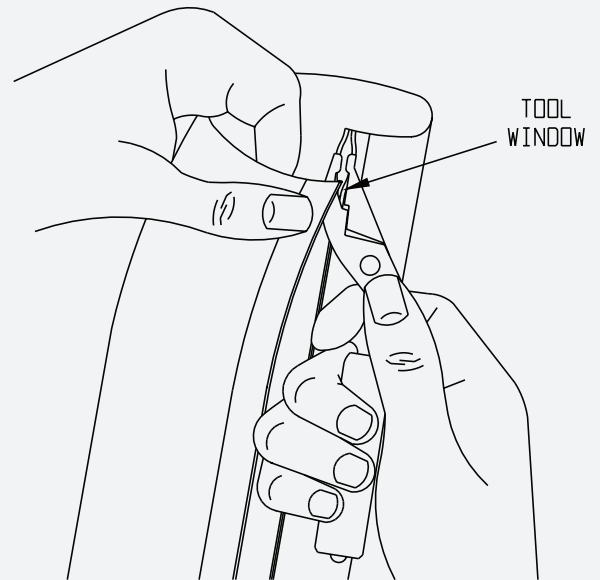
**Figure C**



## STEP 03

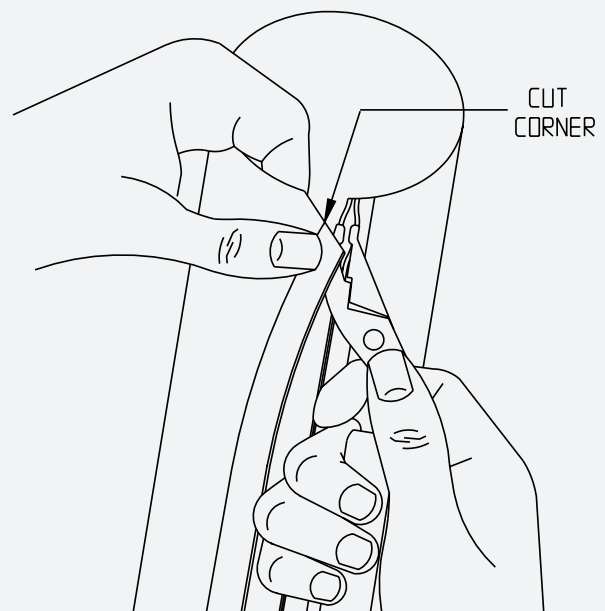
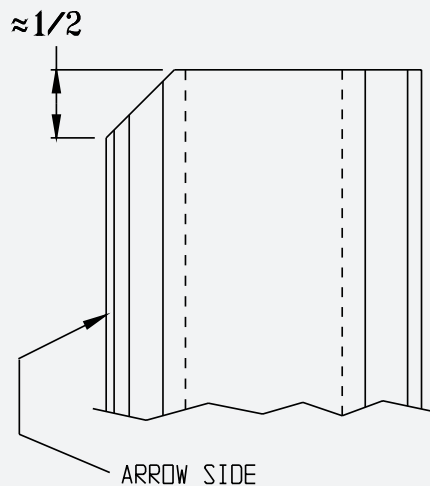
### Inserting the Arrow

While continuing to hold the tool in your right hand (jaws are not spread), grasp the end of the arrowhead side of the jacket with your left hand and bring the two jacket edges close together. This will create a tubular shaped jacket near the tool end. The tool should be set back from the jacket end approximately 1 inch. Pull the arrowhead end back so that it can be inserted into the tool window opening. The tool will have spread the two halves of the channel extrusion open enough in this area to allow the end of the arrow to enter the channel cavity. Pull the arrow end into the channel and continue until both halves of the Z-Track extrusion are even at the tube end.



### Tip:

You may find that with some types of shielded Zippertubing® the jacket stiffness or just the snug fit of a non-shielded jacket around the cable will not allow the arrow end of the jacket to be pulled back far enough to be easily inserted into the channel. To ease this problem, use a pair of scissors and make a 45-degree cut, approximately 1/2-inch back from the end of the jacket on the arrowhead side. This will allow the end of the arrow to be closer to the tool window while not distorting the jacket material very much. You will discover that this will make inserting the arrow easier.

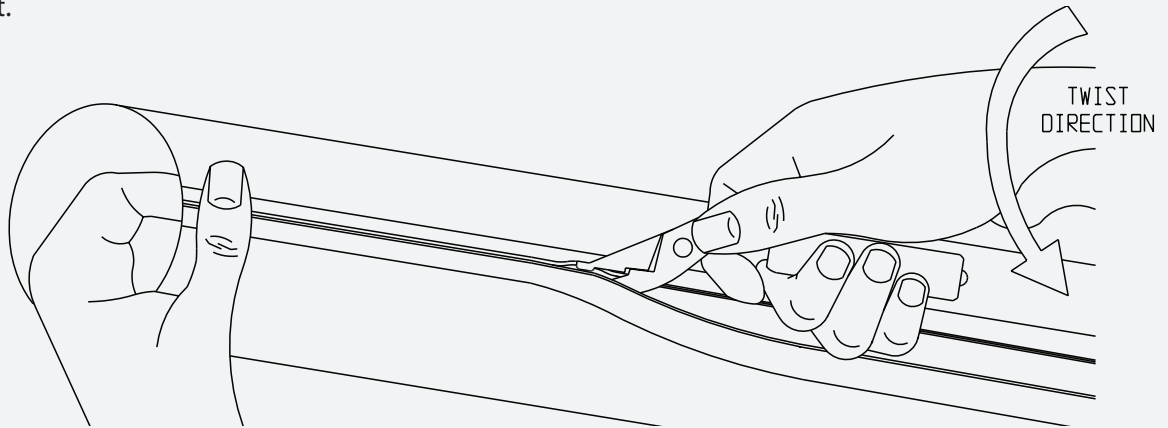


STEP

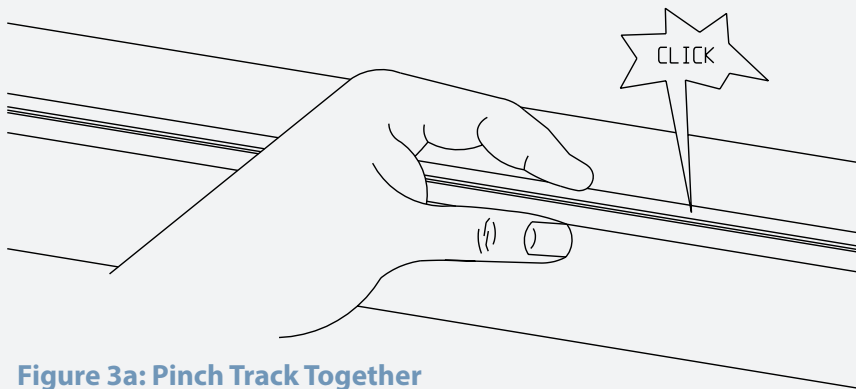
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### Track Closure

Using the thumb and index finger of your left hand, grasp and pinch the arrow and channel together at the end of the tubing. Twist the tool counterclockwise slightly (about 10 degrees) and begin pulling the tool away from your left hand. As the tool slides along it will pull the arrow into the channel cavity and trap it.



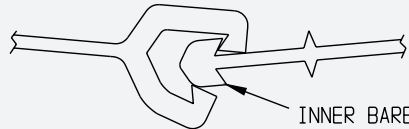
After you have completed closing a few feet of the jacket, use your free hand and pinch the closed track with your fingers starting at the closed end (i.e. as if you were trying to push the arrowhead side into the channel manually). See **Figure 3a**. You may periodically hear a slight pop or click sound. These are areas where only the outer catch of the closure caught the top arrow barb. The click is the inner barb snapping into the channel cavity. This partially closed condition can be caused by excessive tool twisting or pulling the tool along the track too quickly. **Figures 3b** and **3c** illustrate cross section views of the closure with **3b** showing the correct closure and **3c** depicting a partially closed track with only the top arrow barb caught.



**Figure 3a: Pinch Track Together**



**Figure 3b: Correct Condition**



**Figure 3c: Incorrect Condition**

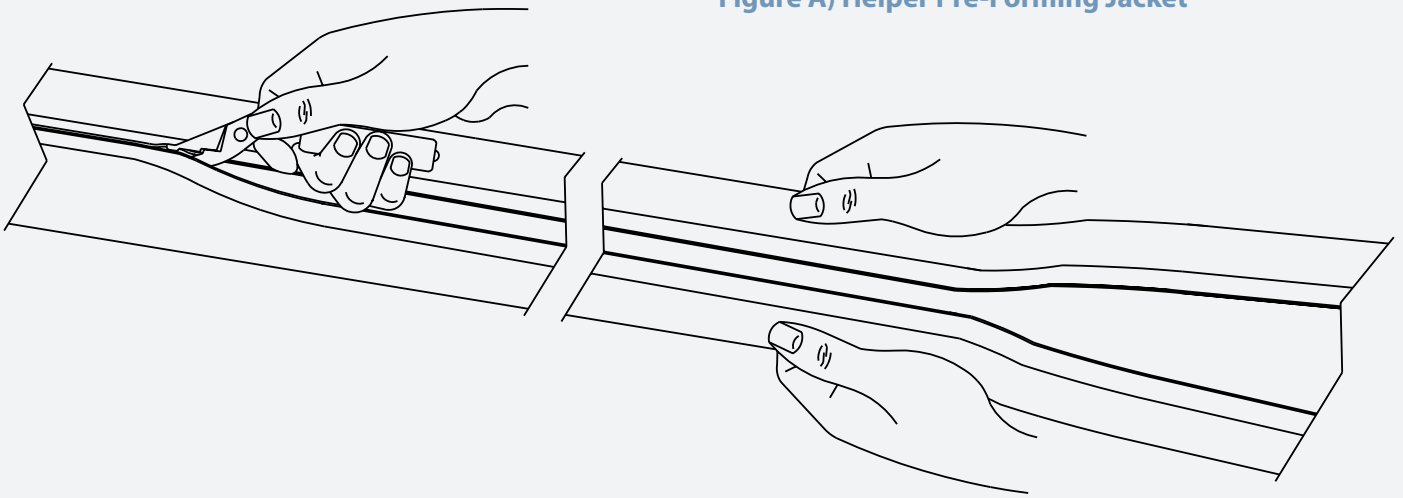
### Note:

An excessive amount of twisting of the pliers will cause the track closure to spiral radially around your cable center, and result in the ends of the jacket not being even. Another negative to imparting too much twist is that it can contribute to the partially closed track condition described above.

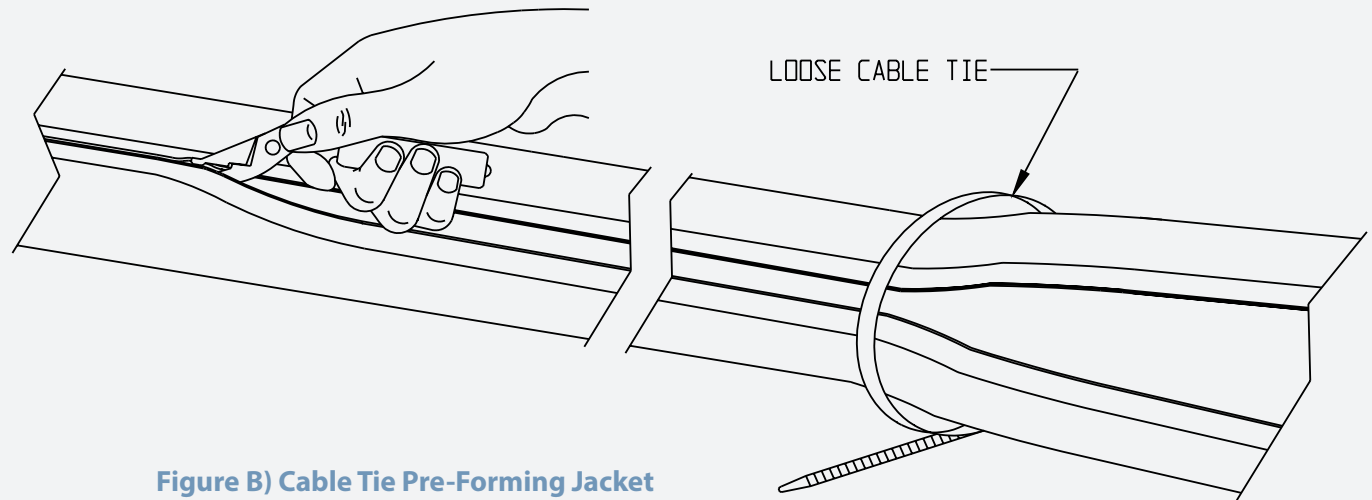
**Note:**

You can ease the tool pull force required by having an assistant preshape the Zippertubing® jacket material around the cable and into a tubular shape ahead of the area you are closing (**Figure A**). If you are working alone, you can loosely install a plastic cable tie around the cable jacket and slide it ahead of you to create the pre-shaped jacket effect (**Figure B**).

**Figure A) Helper Pre-Forming Jacket**



LOOSE CABLE TIE



**Figure B) Cable Tie Pre-Forming Jacket**

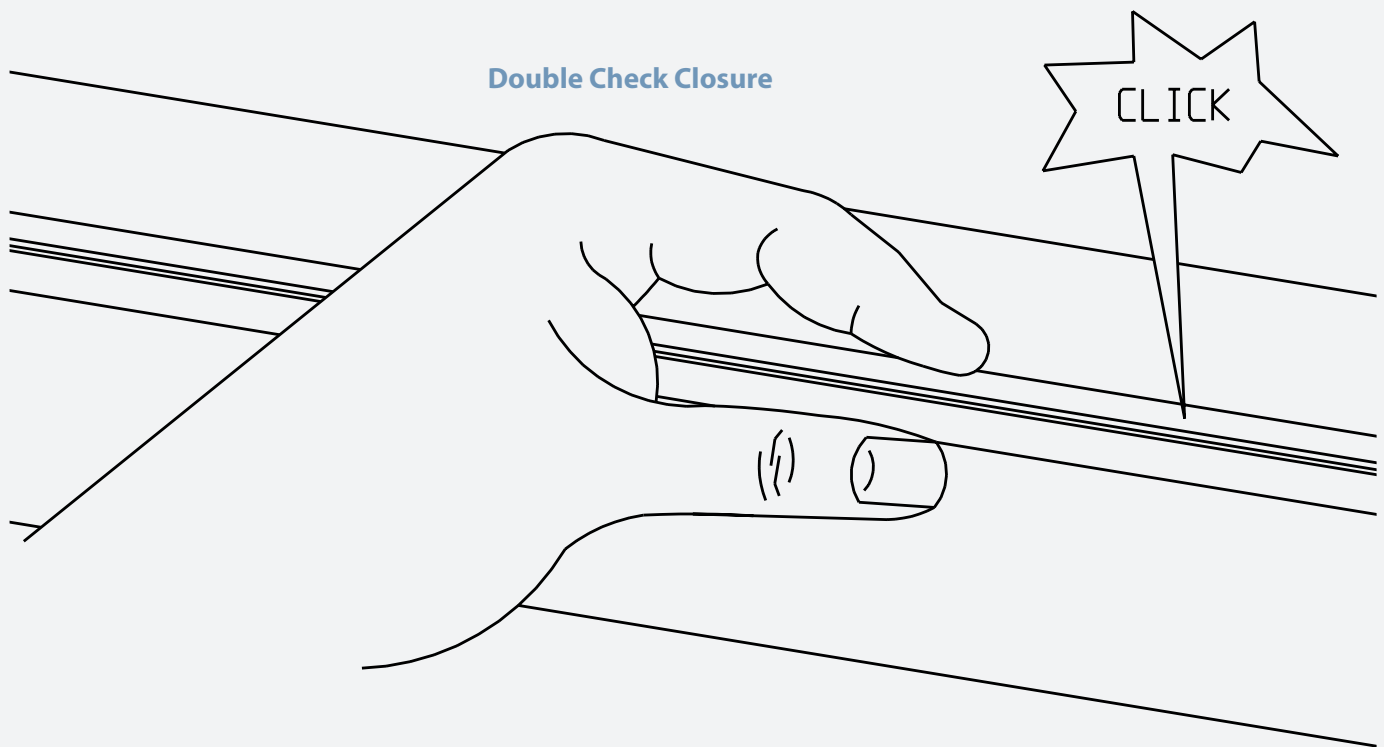


## STEP 05

### Finished Jacket

Once the track has been completely closed and the tool has slid off the end opposite the starting point you will notice that you now have a round tubular jacket from what once was a flat piece of sheet material. Had the jacket been installed around a group of wires and cables you would have a single cable harness that is much easier to route and manage.

Now grasp the closed tubular jacket on either side of the track near the middle of the tube length and try to pull the jacket open. You will find that it takes a significant amount of force to pull the track apart. Vinyl based Z-Track typically requires at least 20 pounds per foot of force to cause the track to separate. Other materials will vary in strength, but a properly closed Z-Track does not open easily! The easiest place to pull a Zippertubing® jacket apart will be near the ends. If your jacket does open easily, then the area you pulled on was probably not closed correctly and had only one barb of the arrowhead properly engaged. Ensure that you always go back and squeeze the track together with your fingers.



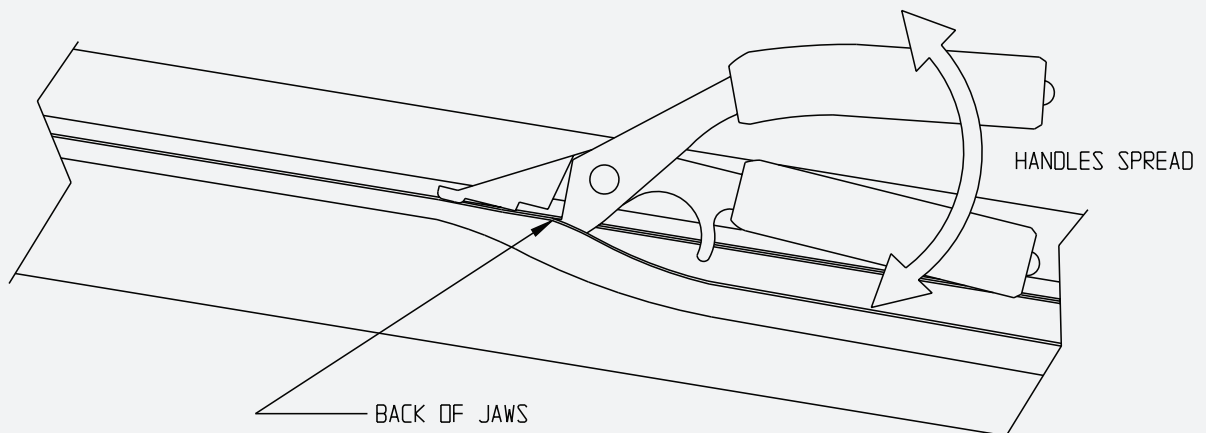
**Note:** If you need to unzip your closure, use your thumbnail and lift the outer catch of the channel side near the tubing end while pulling the arrow barb out and separate the jacket over its entire length.

## TIPS AND TRICKS

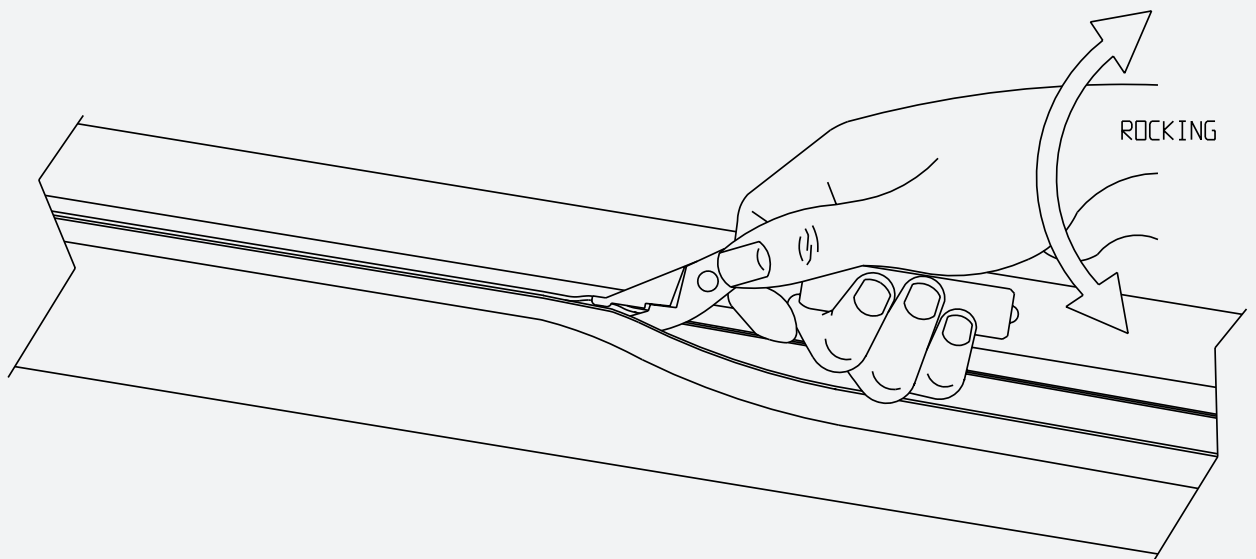
### TIP 01

#### Starting & Stopping Mid Run

Some installations require intermittent starting and stopping, depending on your application. You may stop anytime by spreading the plier tool handles while rocking the tool slightly back and forth to pull the tool off the track. To re-engage your tool, there is no need to unzip the entire tubing length. Finish re-closing the jacket by spreading the plier tool handles and pushing the tool back over the area where the track begins to open. Ensure that the back of the tool jaws are up against the closed track area.



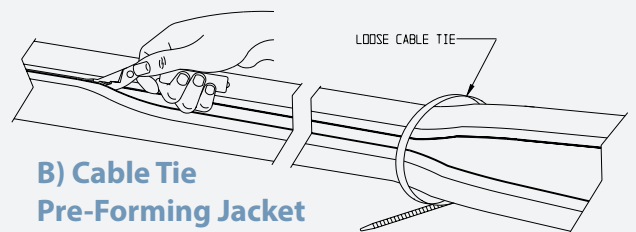
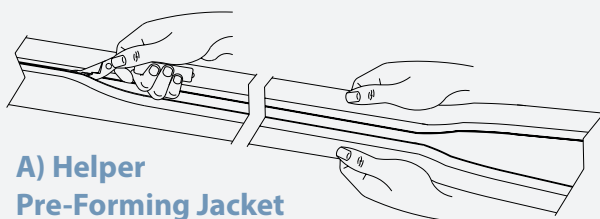
Release the plier tool handles. Grasp the plier handle as you normally would, then rock the tool back and forth as you pull; the tool will re-engage the track and continue closing it.



## TIP 02

### Z-Track Tips & Tricks

1. All jacket diameters must be sized a minimum of  $+1/8''$  larger than the maximum cable diameter that is to be covered. The extra clearance is required for two reasons. First, the plier tool requires some room because the inner jaw of the tool is sliding down the inside of the closing tube. Second, all the tubing jacket materials are non-elastic and as a result must wrinkle up on the inside of all bend radius. This wrinkling effectively reduces the amount of material available to go around the circumference of the cable bundle in these bend areas. The  $+1/8''$  oversize has been found to be sufficient for bundle diameters up to  $3-7/8''$ . For cable bundles of  $4.0''$  and larger, this should be  $+1/8''$  to  $+1/4''$  oversize.
2. Some Zippertubing® material types cause more tool friction than others and as a result can make the tool hard to pull, especially over long jacket lengths. Pre-shaping the tubing ahead of the tool, as previously described, can help reduce this problem. See **A & B** below.



3. Adding a small amount of talcum powder, isopropyl alcohol (IPA) or other non-silicone lubricant to the channel side of the track can also ease the pull force required for closing the track. Keep in mind however, that this lubricating action will also reduce the overall closure strength of the Z-Track joint. Isopropyl alcohol (IPA) is preferred since it will evaporate quickly providing the desired short term lubrication while not reducing the long term track strength.

#### Note:

Always test any lubricant not listed above on a small piece of material to insure that it does not degrade the track or jacket material.

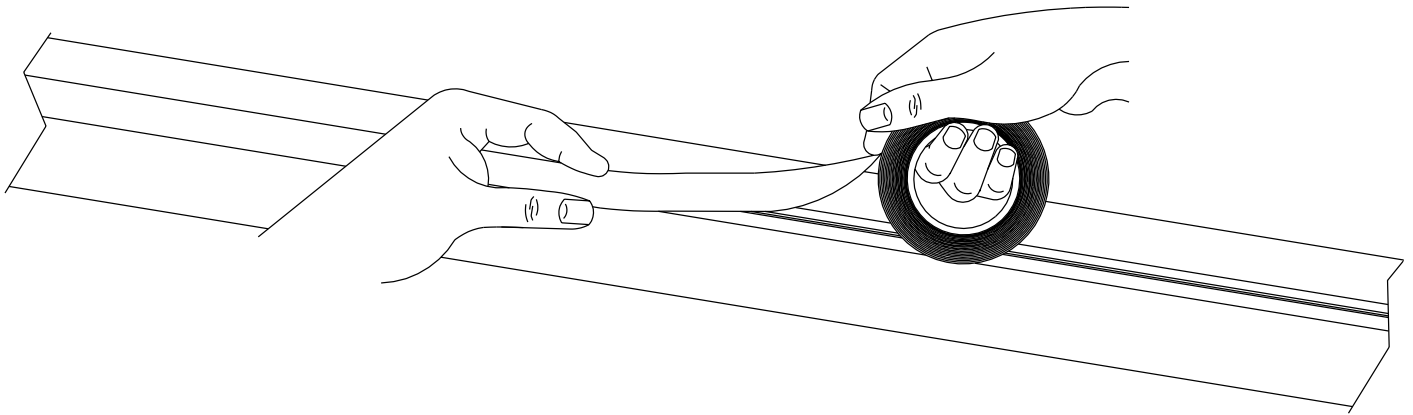


#### CAUTION

The isopropyl alcohol (IPA) material is flammable and may or may not be acceptable in your application situation. Verify with your in-house process engineering department that it is acceptable to use prior to making any installing.

### SEALING EXTRUDED TRACKS

All Zippertubing® products that utilize extruded closure tracks (except type FEP & TPU) can be permanently sealed after closure using the following method. Under normal circumstances a properly closed Zippertubing® track does not require post closure sealing. However, in some applications where an environmental or tamper proof seal is desired or extreme abuse is anticipated, the post sealing process can insure that the track does not re-open inadvertently.



#### ZT-TAPE®

This method involves placing a 1-inch wide strip of Zippertubing® ZT-Tape® down the center of the inter-locking track split line after the track has been closed. The ZT-Tape® is a UL-510 recognized, fire retardant, polyurethane film tape with an acrylic adhesive backing. The adhesive is compatible with both PVC and PFR track materials and is easily applied.



#### CAUTION

The ZT-Tape® is highly elastic and must be applied to the track in a relaxed condition. Stretching the tape during installation can result in disbonding of the film from the adhesive if the assembly is stored or shipped in a coiled or tightly bent condition.








# ZT<sup>®</sup>

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